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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/529,950	06/10/2005	Jan Wietze Huisman	294-212 PCT/US	5540

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HOFFMANN & BARON, LLP
6900 JERICHO TURNPIKE
SYOSSET, NY 11791

EXAMINER	
HAUTH, GALEN H	
ART UNIT	PAPER NUMBER
4111	
MAIL DATE	DELIVERY MODE
06/16/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/529,950	HUISMAN, JAN WIETZE	
	Examiner	Art Unit	
	GALEN HAUTH	4111	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 May 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) *1-9* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *10-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *06/09/2005, 08/10/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Claims 10-16 in the reply filed on 05/21/2008 is acknowledged. Claims 1-9 are withdrawn from consideration.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 10-14, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arentsen et al. (PN 6251318) in view of Slaats et al. (PN 3970732).

a. Arentsen teaches a method for manufacturing biodegradable foam products by injecting natural polymers into a mold, heating the mold and polymer to bake the article (abstract). Arentsen teaches that moisture in the material acts as a blowing agent which is activated by the heat of the mold (col 5 ln 30-35). Arentsen teaches that the mold contains multiple deaeration channels which can

be controlled by a pressure release valve (col 10 ln 60-66). Arentsen fails to teach the application of a overdose space in communication with the deaeration channel into which mass flows.

b. Slaats teaches a method for molding a foamed article in which a foaming material is introduced into a reduced pressure mold cavity which causes the blowing agent to activate and the foam to fill the cavity (abstract). The method results in a work piece that can be formed extremely rapidly and will completely fill the mold cavity without voids while the density of the molded article will be extremely uniform and can be controlled (col 5 ln 11-16). The method teaches using reduced pressure to vaporize the blowing agent at a lower temperature to prevent warp and deformation (col 5 ln 17-21). After foaming the article is heated to completely cure it (col 5 ln 39-42). The mold design of Slaats, shown below, teaches incorporating a vacuum pump (38) connected to a deaeration channel (36) with an overdose recess (28) to contain excess material flashed in the mold.

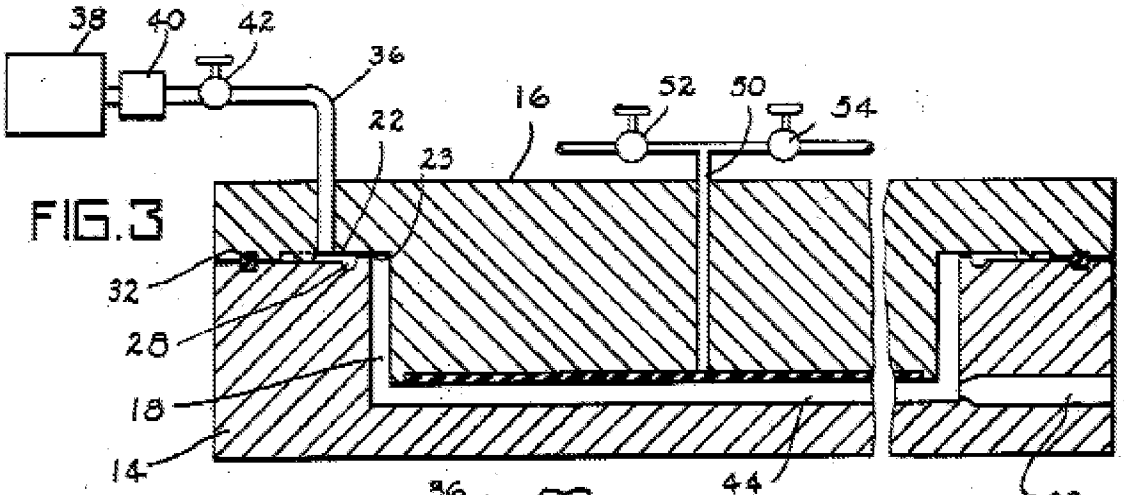


FIG.3

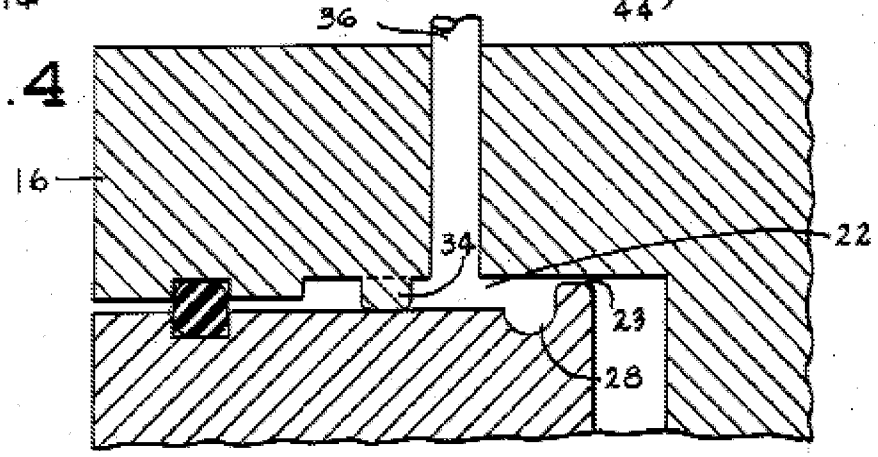


FIG.4

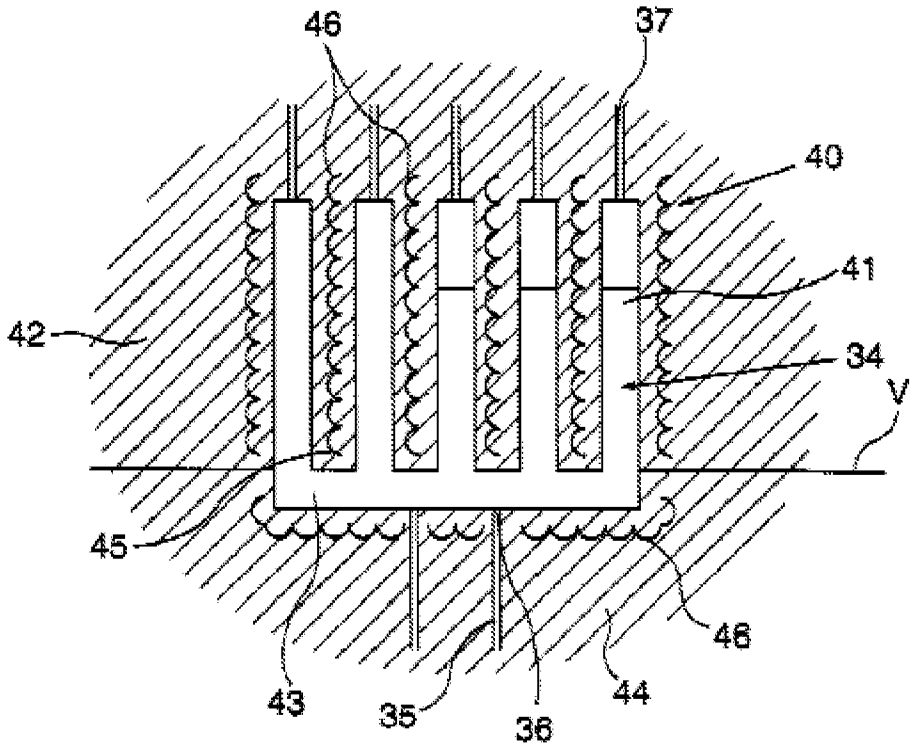
The flow of material into the recess (28) is controlled by a gap (23). The pressure in the deaeration channel (36), gap (28), and mold (44) is controlled by a valve (42). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include in the molding method of Arentsen the reduced pressure molding method of Slaats by adding to the deaeration channels of Arentsen overdose recesses and vacuum pumps to improve the rate of foaming while reducing the deformation and warping of the article and maintaining uniformity by reducing the temperature at which the blowing agent activates. In addition the sub-atmospheric molding method of Arentsen insures

that the principal components of the molding material are completely and intimately admixed (col 5 ln 5-10).

c. With regards to claim 11, the mold taught by Slaats above has a vacuum pump (38) which reduces the pressure in the deaeration channel (36), gap (28), and mold (44). The method teaches using reduced pressure to vaporize the blowing agent at a lower temperature to prevent warp and deformation (col 5 ln 17-21 of Slaats).

d. With regards to claim 12, the method taught by Slaats involves forming the foam extremely rapidly (col 5 ln 11-12) without the addition of a heat source, although heat may be added after foaming (col 39-42). Without a heat source this requires the pressure to be regulated such that the blowing agent foams immediately at a temperature close to or below the temperature of the mass inside the mold cavity.

e. With regards to claims 13 and 14, the mold taught by Arentsen comprises multiple deaeration channels (37) as seen in the figure below.



It would have been obvious to one of ordinary skill in the art at the time the invention was made according to Arentsen in view of Slaats to incorporate a overdose space to correspond to each deaeration channel. Due to the location of the deaeration channels throughout the mold the rate of flow and pressure of material in each deaeration channel would be different, because each is not the same distance from the injection port of the material.

f. With regards to claim 16, Slaats teaches that the material which flows into the overdose space is completely cured (col 5 ln 33-38). Arentsen teaches that the article is cured at a point in which there is cross-linking of the natural polymers (abstract).

5. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arentsen et al. (PN 6251318) in view of Slaats et al. (PN 3970732) as applied to claim 10 above, and further in view of Pontiff et al. (PN 5059376).

a. Arentsen in view of Slaats teaches using a vacuum pump which removes air from the mold cavity. Arentsen in view of Slaats does not teach that the blowing agent is retrieved from the air removed from the cavity and recycled.

b. Pontiff teaches that air passed through foam containing blowing agent is recycled (col 6 ln 18-21). It would have been obvious to one of ordinary skill in the art at the time the invention was made to introduce a raw material recycle stream for recycling the blowing agent, because this would provide a more efficient process with a decrease in materials lost to the atmosphere reducing the cost of the process.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claim 15 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. Claim 15 recites the limitation "each" in describing "...from the or each deaeration channel…". There is insufficient antecedent basis for this limitation in the claim, because claim 10 appears to only recite a single deaeration channel while the word "each" implies multiple deaeration channels.

b. Claim 15 recites the limitation “at least gas” in the context of “wherein air, at least gas from the or each deaeration channel, is sucked away…” It is unclear as to the scope of the claim due to the term “at least gas". In the prior art rejection above the examiner interpreted the claim to mean that the air being removed comes from the deaeration channel as it is being removed from the mold.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GALEN HAUTH whose telephone number is (571)270-5516. The examiner can normally be reached on Monday to Thursday 7:30am-5:00pm ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Sam Yao can be reached on (571)272-1224. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/GHH/

/Sam Chuan C. Yao/
Supervisory Patent Examiner, Art Unit 4111